

62. Title: Tensile strained SiGe quantum well infrared photodetectors based on a light-hole ground state

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Abstract: We report the fabrication and thorough characterization of tensile strained p-type SiGe quantum well infrared photodetectors (QWIPs) grown on a Si_{0.74}Ge_{0.26} pseudosubstrate. The QWIPs operate from a light-hole (LH) ground state and feature responsivity peaks in both the terahertz and mid-infrared regimes with responsivity values up to 3.7 mA/W, originating from LH-LH, LH-heavy-hole, and LH-split-off-band transitions